REMARKS

Claims 1-45 are pending in the present application. In the office Action mailed October 3, 2005, the Examiner rejected claims 44 and 45 under 35 U.S.C. §112, second paragraph, as being indefinite for lacking antecedent basis for certain elements called for therein. Applicant has amended claims 44 and 45 to resolve the antecedent basis issues raised by the Examiner. The Examiner next rejected claims 1, 2, and 9-17 under 35 U.S.C. §103(a) as being unpatentable over UK Patent Application GB2316244A (hereinafter GB '244) taken with Crandell (USP 6,747,246). Claims 3-8, 18-26, 33, 34, and 36-40 stand rejected under 35 U.S.C. §103(a) as being unpatentable over GB '244 taken with Crandell in view of Blankenship (USP 6,331,694; hereinafter Blankenship '694). Claims 27-32 and 43 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the four-way combination of GB '244, Crandell, Blankenship '694, and further in view of Blankenship et al. (USP 6,552,303; hereinafter Blankenship et al. '303). Claim 35 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Crandell. Claims 41 and 42 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Blankenship et al '303.

The Examiner rejected claims 1, 2, and 9-17 under 35 U.S.C. §103(a) as being unpatentable over GB '244 in view of Crandell. Applicant has amended claim 1 to include the subject matter of claim 3. Claim 3 is hereby cancelled. As amended, claim 1 calls for, in part, a welding-type power source which includes a boost circuit connected to an energy storage device and configured to boost a first voltage output of the energy storage device to a second voltage output to supply power to the welding-type power source according to a selected welding-type process. Claim 1 further calls for a chopper circuit configured to receive the second voltage output and convert the second voltage output to a power output matched to the selected welding-type process. That is, claim 1 calls for a battery powered welding device which includes a boost circuit configured to receive a power signal from the battery and a chopper circuit configured to receive the power signal generated by the boost circuit. The Examiner has acknowledged that such a welding device is not taught, shown, or suggested in either GB '244 or Crandell or the combination thereof by not including claim 3 in the rejection thereover.

The Examiner rejected the subject matter of original claim 3 under 35 U.S.C. §103(a) as being unpatentable over GB '244 taken with Crandell and further in view of Blankenship '694 stating that "at the time applicant's invention was made, it would have been obvious to have used a boost and buck type system in the UK patent application no. GB2316244A as claimed and to have provided the regulation as claimed, the motivation being the teachings of Blankenship (6,331,694) that it is advantageous to use a boost, buck circuit to process the output of a fixed

voltage DC source for welding and to provide voltage and current feedback for the same (see figure 7 and the discussion at columns 15-16 in Blankenship (6,331,694))." Applicant respectfully disagrees.

Although Applicant does not necessarily disagree that Blankenship '694 discloses a buck converter for power conversion, the disclosure of Blankenship '694 as a whole does not support the Examiners suggestion that it is combinable with the battery powered welders of GB '244 and/or Crandell. In order to establish a *prima facie* obviousness rejection, the references must not only disclose each and every element called for in the claims and with as much specificity as recited therein, but must also include a motivation to combine the references. In establishing the motivation to combine the references, one cannot ignore those portions of the references which teach away from the suggested combination. Blankenship '694 cannot be combined with the battery operated systems of the other references. Blankenship specifically argues against such battery operated systems.

As stated in Blankenship '694, "Battery powered arc welders are very bulky and have a limited life." Col. 2, lns. 7-9. Blankenship '694 further states that "furthermore, once the battery has been discharged, the battery must be disposed of which in-of-itself an environmental concern", "many batteries require concentrated acids which can be harmful", "the acid is also an environmental pollutant requiring special and costly disposal", and that "solar power is another power source which is not feasible for use with an electric arc welder." Col. 2, lns. 10-21. That is, Blankenship '694 expressly states that a portable welding device powered by a battery is not feasible. Such teaching cannot be ignored. Blankenship '694 states that battery powered welders are simply not feasible. Accordingly, there is no motivation to combine the teachings of Blankenship '694 with a battery powered welding device as suggested by the Examiner. Accordingly, Applicant believes claim 1, and the claims that depend therefrom, are patentably distinct over the art of record.

The Examiner next rejected claims 3-8, 18-26, 33, 34, and 36-40 under 35 U.S.C. §103(a) as being unpatentable over GB '244 taken with Crandell in view of Blankenship '694. As argued above with respect to claim 1, Blankenship '694 expressly states that generating weld power with any of solar power, wind power, or battery power is not feasible. Blankenship '694 states that "the bulkiness of batteries ... compound the size problems of the arc welder" and that "the electric circuitry in the welder is limited to a certain size by the power demands of the arc welder." Col. 2, lns. 26-30. Blankenship '694 further states that "in view of the problems associated with alternative power sources for electric arc welders, there is a need for an improved power source that is environmentally friendly, can be safely use [sic] in a wide variety of

locations, and is simple and safe to operate." Col. 2, lns. 35-39. Blankenship '694 is clear that they believed that battery powered welding devices are dangerous, hazardous, immobile, and/or complex to operate and therefore are not feasible. Therefore a combination of Blankenship '694 with a pair of battery powered welders directly contradicts the express teaching of Blankenship '694. It is clear that the references do not include the requisite motivation to combine the references in the manner done by the Examiner. Accordingly, any rejection relying in whole or in part on Blankenship '694 must fail in light of the extensive teaching of Blankenship '694 away from a battery powered welder. Applicant therefore believes that claims 18, 23, and 36, and the claims that depend therefrom, are patentably distinct over the art of record.

The Examiner next rejected claims 27-32 and 43 under 35 U.S.C. §103(a) as being unpatentable over the four-way combination of GB '244, Crandell, Blankenship '694, and further in view of Blankenship et al. '303. Although Applicant believes these claims are in condition for allowance at least pursuant to the chain of dependency, Applicant respectfully believes the Examiner's interpretation of Blankenship et al. '303 is in error. The Examiner states that "it would have been obvious to have used a control system based on interchangeable control modules, the motivation being the teachings of [Blankenship et al. '303] that such is advantageous (see the discussion of the control of the power supply based on a memory button chip in columns 2-7 of [Blankenship et al. '303]." Applicant has reviewed not only the cited portion of Blankenship et al. '303 but the entirety thereof and failed to uncover the presently claimed control module. For example, claim 27 calls for an interchangeable control module configured to control operation of a welding-type apparatus to operate according to one of a plurality of welding-type processes. That is, any one of a plurality of interchangeable control modules controls operation of the welding device according to one of a plurality of welding processes. While Applicant does not necessarily disagree that Blankenship et al. '303 discloses a multi-buttoned control system, that is not what is presently claimed.

Blankenship et al. '303 discloses a welder having a noninterchangeable controller that is configured to control operation of the welder according to the instructions delivered to the controller from a plurality of project specific memory buttons. See Abstract. That is, Blankenship et al. '303 discloses a welder having a controller which is configured to receive a plurality of individual, project specific, buttons. Referring to Fig. 1, Blankenship et al. '303 states that "controller 20 causes welder A to perform a variety of welding processes involving weld parameters (I, V, WFS), electrical characteristics (AC, DC+, DC-) and other definitions of the welding mode (pulse, spray, globular, short circuit, STT)." Col. 7, lns. 23-27. That is, the welding device includes a controller that is configured to operate at a variety of modes and with a

variety of parameters. Blankenship et al. '303 continues that "system 10 includes touch connector 60 in the form of a strip having a series of receptacles for memory buttons" and that "each button has an internal chip loaded with digital data." Col. 7, lns. 29-33. Blankenship et al. '303 further states that "[t]ouch connector 60 is shown with several receptacles 62-66 for receiving memory buttons 100-106, respectively [and] the internal digital chip of each button is loaded with digital information indicative of certain parameters...." Col. 7, lns. 33-34. Each memory button delivers only its respective operating parameter to the welding device. That is, only when the welding device is equipped with all of the appropriate memory buttons will the controller of the welding device cause operation thereof according to the welding-type process, only a part or which, is contained on each individual memory button. As such, none of the interchangeable buttons are capable of controlling operation of the welding-type device as each button only includes a single parameter associated with the operation of the welding-type device.

This is not what is called for in the present claims. Claim 27 calls for an interchangeable control module that is configured to control operation of the apparatus. None of the memory buttons of Blankenship et al. '303 are configured to control operation of the apparatus. Each button only contains data specific to a particular variable; i.e. WFS, current, voltage, material transfer mode. The data of each button is communicated to controller 20 of the welding device which controls the operation of the welding-type device according to the combination of each of individual parameters delivered from the buttons. The controller of the welding device is not interchangeable but the welding device includes a plurality of removable instruction input keys. This is not what is claimed. Whereas each of the buttons of Blankenship et al. '303 only includes data specific to one parameter of a welding process and do not control operation of the welding-type apparatus, Blankenship et al. '303 fails to teach, suggest, or disclose an interchangeable control module as presently claimed. Accordingly, in addition to the arguments above, Applicant believes claims 27-32 and 43 are patentably distinct over the art of record as that which is called for therein is not taught or suggested in the art of record.

The Examiner next rejected claim 35 under 35 U.S.C. §103(a) as being unpatentable over Crandell stating that "the claim differs from Crandell, III (6,747,246) in specifying that the output of the battery is 'less than that required by the welding-type apparatus" and that "it is considered obvious that the battery 25 in the system of Crandell, III (6,747,246) could be in a discharged state after an intensive work session in view of the intrinsic nature of batteries." The Examiner further states that "this discharged state would obviously constitute an output that was less than that required by the welding apparatus, thereby satisfying the claim." Applicant has amended claim 35 to further define and clarify what was intended for therein. As amended, claim 35

specifies that the battery called for has a fully charged output that is less than an output required by a welding-type apparatus. Applicant did not intend to claim a discharged battery, as the Examiner has interpreted the claims. Crandell discloses that the power of the battery is used directly by the welding-type apparatus. That is, the power of the battery is delivered for a welding-type process regardless of the level of discharge of the battery. Accordingly, the apparatus of Crandell is incapable of operation according to claim 35. As such, Applicant believes claim 35 is patentably distinct thereover.

The Examiner next rejected claims 41 and 42 under 35 U.S.C. §103(a) as being unpatentable over Blankenship et al '303 stating that "the discussion in columns 2-7 in the patent to Blankenship et al. (6,552,303) discloses interchangeable control modules in the form of memory buttons having features claimed" and that "[t]he claims differ from Blankenship et al. (6,552,303) in calling for a socket extending from the module housing." The Examiner further asserts that "[t]his difference does not patentably distinguish over the prior art [because] [i]n column 7, lns. 38-40 of Blankenship (6,331,694) is a discussion of receptacles 62-66 that receive memory button." It is unclear whether the rejection relies entirely on Blankenship '303 or on the combination of Blankenship '303 and Blankenship '694. Blankenship '694 does not include the alleged disclosure. Regardless, claim 41 calls for in interchangeable control module that includes a control circuit that is configured to control operation of the welding-type apparatus according to at least one of a plurality of operating modes. As argued above with respect to Blankenship '303, there is no such control module disclosed therein. That is, each data button of Blankenship '303 includes only one specific parameter associated with operation of the welding-type device. Blankenship '303 further discloses that this data must be communicated to the controller of the welding-type device prior to any operation thereof. This is not what is called in claim 41. Claim 41 calls for interchangeable control module that includes a control circuit configured to control operation of the welding-type apparatus. The data buttons of Blankenship '303, the only interchangeable component thereof, are incapable of controlling operation of the welding-type apparatus as claimed. The operation of the welding-type apparatus of Blankenship '303 is controlled by the non-interchangeable controller (20) that is connected to the welding-type device and not the memory buttons as alleged. Accordingly, Applicant requests both clarification of the references relied upon in rejecting claims 41 and 42 and consideration of the arguments related to the patentability of these claims over the art of record.

The Examiner lastly indicated that claims 44 and 45 were "too inadequate" under 35 U.S.C. §112, second paragraph for examination thereof with respect to the art of record. Applicant is uncertain as to the extent of inadequacy of claims 44 and 45 other than an antecedent

basis problem with the circuits. Applicant has amended claims 44 and 45 to correct the antecedent basis issues therewith. Accordingly, Applicant believes claims 44 and 45 are in accordance with the requirements of 35 U.S.C. §112, second paragraph. In an effort to expedite prosecution, Applicant invites the Examiner to call the undersigned should the claims be lacking in some other way. However, as these claims depend from claims otherwise believed to be patentably distinct, Applicant believes these claims to be in condition for allowance at least pursuant to the chain of the dependency.

Therefore, in light of at least the foregoing, Applicant respectfully believes that the present application is in condition for allowance. As a result, Applicant respectfully requests timely issuance of a Notice of Allowance for claims 1, 2, and 4-45.

Applicant appreciates the Examiner's consideration of these Amendments and Remarks and cordially invites the Examiner to call the undersigned, should the Examiner consider any matters unresolved.

Respectfully submitted,

/Timothy J. Ziolkowski/

Timothy J. Ziolkowski
Registration No. 38,368
Direct Dial 262-376-5139
tjz@zpspatents.com

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P.O. ADDRESS:
Ziolkowski Patent Solutions Group, SC
14135 North Cedarburg Road
Mequon, WI 53097-1416
262-376-5170